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10/512,407	10/25/2004	Masahiro Oshikiri	L9289.04162	4624

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EXAMINER
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ART UNIT	PAPER NUMBER
2626	

MAIL DATE	DELIVERY MODE
12/08/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _08 September 2009_.
2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _43-56_ is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) _43-54_ is/are rejected.
7)☒ Claim(s) _55 and 56_ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some * c)☐ None of:
        1.☐ Certified copies of the priority documents have been received.
        2.☐ Certified copies of the priority documents have been received in Application No. _____.
        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5)☐ Notice of Informal Patent Application
6)☐ Other: _____.

DETAILED ACTION

1. This communication is in response to the Amendments and Arguments filed on 09/08/2009. Claims 43-56 are pending. The Applicants' amendment and remarks have been carefully considered, but they do not place the claims in condition for allowance. Accordingly, this action has been made FINAL.

2.   All previous objections and rejections directed to the Applicant's disclosure and claims not discussed in this Office Action have been withdrawn by the Examiner.

Response to Amendments and Arguments

3.   Applicant's arguments (pages 9-11) filed on 09/08/2009 with regard to claims 43-56 have been fully considered. The 35 USC 101 rejections with respect to claims 43-54 are maintained for the reasons mentioned below. The 35 USC 103 rejections have been withdrawn in view of the newly amended limitations, which indicate allowable subject matter.

With respect to the 35 USC 101 rejections of claim 1, the Applicant asserts that the newly amended limitations overcome the rejections from the previous action. The Examiner disagrees with this assertion. The Applicants in claims 43-54 primarily amended the claims to replace the "section" terminology with, for example, coder type language. However, even with the use of such terminology the claims are directed to software. As discussed in the prior Acton, paragraphs [0395] describe a particular embodiment being implemented as software alone. The subsequent paragraphs present an embodiment where software and

hardware define structural and functional interrelationships between data and

other claimed aspects of the invention, which permit the data structure's

functionality to be realized. Hence, the Applicant's amendment is not persuasive.

Specification

4.   The following title is suggested: A Scalable Coder and Decoder Performing

Amplitude Flattening for Error Spectrum Estimation.

Claim Objections

5.   Claims 43, 48, 55, and 56 are objected to because of the following informalities:

"calculating the following equation" should be "calculating an equation" as the equation

has not been introduced until the end of the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 101

6.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

7.   Claims 43-54 are rejected under 35 U.S.C. 101 because the claims appear to be

directed to a software embodiment and not to a hardware embodiment, where a

machine claim is directed towards a system, apparatus, or arrangement. The claim

limitations, which are means plus function, appear to be directed towards a program as

stated in the published application, paragraphs [0395]-[0397], where the signal

processing method is contained in the form of a program. Since, all of the claimed

limitations (signal processing method referred to the claimed functions performed by the

structures in the claim) are contained in the form of program stored in RAM or ROM, the

claim is directed to software and not hardware since no storage of these instructions in

a computer memory executed by a processor is being described. Further, the claim

does not contain any limitation that would enable the claim not to be directed towards

software. Thus, the claims are directed towards non-statutory subject matter. See

MPEP 2106.01 [R-5]. Data structures not claimed as embodied in computer readable

media are descriptive material *per se* and are not statutory because they are not

capable of causing functional change in the computer. See e.g., Warmerdam, 33 F.3d

at 1361, 31, USPQ2d at 1760 (claim to a data structure *per se* held nonstatutory). Such

claimed data structures do not define any structural and functional interrelationships

between data and other claimed aspects of the invention, which permit the data

structure's functionality to be realized. In contrast, a claimed computer readable storage

medium encoded with a data structure defines structural and functional

interrelationships between the data structure and the computer software and hardware

components which permit the data structure's functionality to be realized, and is thus

statutory.

Allowable Subject Matter

8.   Claim 55 and 56 are allowed.

9.   Claims 43-54 would be allowable if rewritten or amended to overcome the

rejection(s) under 35 U.S.C. 101, set forth in this Office action.

10.   The following is a statement of reasons for the indication of allowable subject

matter: None of the cited references either alone or in combination thereof teach the

equation for calculating an estimated error spectrum as claimed, deriving a frequency

region based on the calculated error spectrum for which the second coder utilizes,

where the equation is in the form of $E'(m) = a \cdot P(m)^{\gamma}$, where 1> a, γ>=0.

The closest prior art of record Jin teaches a scalable coder comprising: a

first coding section (see [0015], 1st encoder 241) that performs weighting on an

input signal to mask a spectrum of quantization distortion by a spectral envelope

of the input signal, and thereafter encodes the input signal and obtains first

coding information (see [0020], acoustic sense weighting filter 42 is used for

performing weighting in order to consider the masking property of humans. The

acoustic weighting determined based on spectral weighting);a decoding section

(see [0015], local decoder 251) that decodes the first coding information and

obtains a decoded signal (see [0015])(e.g. The local decoder decodes the signal

from the encoder 241.);a subtracting section (see [0015], difference circuit 28)

that obtains a residual error signal of the input signal and the decoded signal;

and a second coding section (see [0015], 2nd encoder 242) that encodes the

frequency region in the residual error signal specified by the specifying section,

and obtains second coding information (see [0015], difference circuit 28)

between said input signal and said decoded signal of which sampling rate is

raised, and obtains second coding information (see [0015] and [0016]) (e.g. The

values of the decoded signal for which the sampling rate was raised and the

input signal are the parameters. A difference is computed and the second coding

information is obtained.). However, Jin does not specifically disclose the

specificator calculates an auditory masking threshold and generates an error

spectrum from the equation as claimed.

Pan teaches a specificator (see Figure 1, Hybrid Psychoacoustic Modeling

and Quantizer Control Unit 132) that calculates an auditory masking threshold for

a decoded spectrum that is obtained from the decoded signal (see Figure 1,

output of low bit rate decoding unit 130, into 132), generates an error spectrum

(see output of 110, into Time-Frequency analysis unit 114 and see Figure 1,

output of 110, where the subtracted input and decoded signal is the attenuated

estimated error spectrum and the predefined constants were interpreted to be 1,

which yields the error signal in the frequency domain), compares the estimated

error spectrum with the auditory masking threshold (see col. 6, lines 6-12,

frequency coefficients are used indicating a spectrum of the signal and compared

to masking thresholds), and specifies a frequency region in the estimated error

spectrum showing an amplitude equal to or greater than the auditory masking

threshold (see col. 6, lines 6-12, frequency coefficients are flagged for those that

may be omitted from coding and see Figure 4). However, Pan does not teach the

generation of the error spectrum by calculation the equation as claimed, where

the parameters are $1 > a$, $\gamma >=$.

Conclusion

11.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

12.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

Bruhn (Us 6,611,798) is cited to disclose spectral smoothing to enhance the

perceptual nature of acoustic signals.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to PARAS SHAH whose telephone number is (571)270-

1650. The examiner can normally be reached on MON.-THURS. 7:30a.m.-4:00p.m.

EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on (571)272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David R Hudspeth/
Supervisory Patent Examiner, Art Unit 2626

/Paras Shah/
Examiner, Art Unit 2626

11/25/2009